

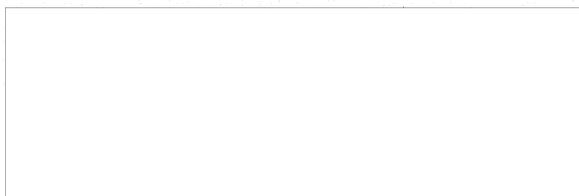
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Abstracts From 'Works of the Institute of Oceanology, Vol VI (1951)'

Trudy Instituta Okeanologii, V. N. Nikitin (editor)
Moscow/Leningrad, Vol VI (1951)

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ABSTRACTS FROM WORKS OF THE INSTITUTE OF OCEANOLOGY, VOLUME VI (1951)

V. N. Nikitin (editor)

(Note: The following are brief abstracts of the 12 articles making up the 150-page symposium entitled 'Trudy Instituta Okeanologii; Volume VI (1951), published in Moscow and Leningrad by the Academy of Sciences USSR Press; editor is professor V. N. Nikitin).

1. "Determining the Stationary Currents and the Field of Masses Due to Wind in a Baroclinic Sea", V. E. Sitokanov, pp 3-48.

This article is a theoretical mathematical study with the object of: 1) determining the full flows in the sea, with consideration for the effect of wind and lateral friction; and 2) analyzing the effect of lateral friction in a Coriolis-force field and the distribution of current density and velocity due to wind in certain concrete cases.

Two other works by the same author are: "Analyzing the Applicability of Indirect Methods for Calculating the Geostrophic Currents Under Conditions of the Greenland Sea", Trudy Arkticheskogo Instituta, Volume 184 (1944); "Investigating the Influence of Wind and Bottom Relief on Resulting Circulation and Mass Distribution in an Inhomogeneous Ocean", Trudy Instituta Okeanologii AN SSSR, Volume III (1949).

A related English-language reference is by H. O. Feld, entitled "A Model of the Vertical Structure of Mass in Equatorial Wind-Driven Currents of a Baroclinic Ocean", J of Marine Res, Vol VII, No. 3, 1948.

2. "Laws Governing the Variation in the Dissipation of Energy in the Stationary Wind Currents of the Baltic Sea", K. V. Moroshkin, pp 49-58.

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The author was assisted by the advice of V. G. Shtokman, whose 1947 formula for energy dissipation $E = TV_0 \cdot \cos \alpha$ is used in the calculations. Tables and graphs show dissipation E in ergs/cm²·sec versus angles for various wind velocities W , from 6 to 14 m/sec, and for various places. (V_0 is the velocity in cm/sec of the current at the sea's surface; T is the tangential pressure of the wind in dynes/cm²; α is the full dissipation of energy per unit time in a column of sea water 1 cm² in cross-section and from the surface to the bottom of the sea in height; α is the angle between the wind of the tangential pressure T and the vector of the surface velocity of flow V_0 . T is found from W thus: $T = \rho \cdot (25/10000)W^2$, where ρ is the density of air, 1.3/1000 g/cm³).

3. "Problem of the Dynamics of the Profile of Sandy Beaches", V. V. Longinov and G. K. Leontyev, pp 59-69.

This article gives a description of experiments in Sept 1948 made on sections of the Caspian shore to determine the factors in the variation of the shore profile; namely, physical composition of the sand, microrelief, current direction, etc. Cf Shepard and LeFond, "Sand movements along the Scripps Institution pier", *Mar Sci*, Vol 238, 1940. An important Soviet work on this subject is *Dynamics and Morphology of Sea Shores (Dinamika i Morfologiya Morskikh Beregov)*, 1946, V. P. Lenkovich, published by Marine Transport.

4. "The velocity of the forward and back motion of the water, Relative to the bottom, in a Trochoidal Wave", V. V. Longinov, pp 70-72.

The ratio of the forward velocity to the rearward velocity is demonstrated to be $a = v_f/v_r = (n + 2)/(n - 2)$, where n is the ratio of the wavelength L to the height h of the wave. The ratio a is called the coefficient of asymmetry of the wave and characterizes the asymmetry of both the velocity and the wave form.

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5. "Ultimate Forms of Underwater Abrasion", V. V. Longinov, pp 73-77.

The author describes many parts of the submarine coastal slope of the Black Sea, in the regions of development of the upper Cretaceous and Paleogene flysch, as being abraded surfaces of aboriginal rocks (benches) almost devoid of a cover of detritus down to depths greater than 20 meters. He gives a schematic picture of this condition.

6. "Ancient Forms of Marine Abrasion", G. L. Gidintsev, pp 78-82.

The author describes interesting ancient forms of abrasion observed in summer of 1948 on one of the coastal islands off the Crimean coast. He gives schematic pictures of the longitudinal profile of the island and of the northern coast of this island.

7. "The upheaval of the coasts of Crimea", V. I. Ladaev, pp 83-87.

The author considers the interesting problem concerning the vertical movements of the Crimean coasts, usually thought of by others from the paleogeographical point of view. However, the author has finally succeeded in finding convincing proofs of very recent or present upheavals in coasts, based on the incline of the surface of present-day accumulative marine terraces. He gives four profiles of various unnamed coasts.

8. "Observations of the Dynamics of Underwater Sand Banks", Ye. N. Yegorov, pp 88-98.

The author describes the variations in the profile of sand banks from 17 June to 29 Sept 1949, on the Black Sea. Cf F. P. Shephard, Submarine Geology, 1948.

9. "Variations in the Mineralogical Composition of Coastal Marine Detritus in Dependence Upon the Depth and Bottom Relief", Ye. N. Mever'skiy, pp 99-104.

The author describes experiments on samples of coastal sediments from the western shores of central Caspian, gathered by sloops of the Institute in 1946-

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1948. He gives the percentage composition, various depth (2 to 15 meters), of several cross-sectional profiles, in terms of 26 minerals (pyrite, magnetite, granite, rutile, barite, dolomite, zircon, etc).

10. "The Ichthyofauna of the Caspian Sea and Certain Problems of Its History", T. S. Iasa, pp 105-114.

The author lists over a 100 species of fishes found in the Caspian, with a description of the biological characteristics (fresh water, salt water, etc). Cf I. Berg, Übersicht der Verbreitung der Süßwasser-fische Europas. Zoographica, 1 (2), 1922.

11. "Certain Zoogeographical Localities of the Nivalis Pollacks of the Portlandic genus", A. A. Filitsa, pp 117-121.

The authoress gives the distribution of the Portlandic species *P. typica* and the *P. arctica portlandica* in the White Sea; and the occurrence of *P. arctica*, *P. typica* and *P. antarctica* on the coasts of Novaya Zemlya, and in various other regions of the North Sea. Cf F. Hitchcock, Sketch of Geology of Portland, Boston Journal of Natural History, Volume I, 1894. G. H. Bell, the Pollack of Arctic Coast, Report of Canadian Arctic Expedition, 1919.

12. "The Biology of the Arctic Sea Turnpike", A. M. Pokrovskaya, pp 132-149.

The authoress discusses the abundance of subject fish (*Hyoxcephalus quadricornis lat. adriacus*, var.) according to year and month. The fish is about 23 cm long. She correlates ichthyological characteristics (length, scales, measurements, etc) with their locations (Baydarats Bay, Karsh Sea, sea bank, depths, etc) in the form of detailed tables. State of the sexual glands is correlated with the seasons; the frequency distribution according to size is also given. The authoress concludes that this fish is wide spread on the coast of the Karsh Sea, especially in the western half around the north coasts of Obsk Bay.

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